# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/708,427 | 03/02/2004 | Dan Shoham | | 2426 |

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| EXAMINER |
|---|
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| ART UNIT | PAPER NUMBER |
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| 3693 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| | Application No. | Applicant(s) |
| --- | --- | --- |
| **Office Action Summary** | 10/708,427 | SHOHAM, DAN |
| | Examiner | Art Unit | |
| | JARED W. NEWTON | 3693 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on <u>02 March 2004</u>.

2a) ☐ This action is **FINAL**.  2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) <u>1-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-20</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>02 March 2004</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some *  c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____ .

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

## DETAILED ACTION

### *Claim Objections*

Claim 1 is objected to because of the following informalities: the term "andgenerating" (lines 9-10) should be changed to --and generating--. Appropriate correction is required.

Claim 17 is objected to because of the following informalities: the term "andgenerating" (line 12) should be changed to --and generating--. Appropriate correction is required.

Claim 17 is further objected to because of the following informalities: the term "loan"s" should be replaced with --loan's--. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 modifies the "performance metric" of claim 2, which is understood to mean a single performance metric. However, claim 3 further claims the metric as comprising two distinct measurements, rendering the claim indefinite. For purposes of examination, the claim has been interpreted to require the metric to comprise one metric or the other, but not both.

## *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims are rejected under 35 U.S.C. 103(a) as being unpatentable over US

Patent No. 7,191,150 to Shao et al. (hereafter Shao) in view of Saphir, *More than*

*numbers*, Modern Health Care. Aug 21, 2000 (hereafter Saphir).

In regard to claim 1, Shao discloses a computer implemented method for

determining a creditworthiness metric of a credit applicant (see e.g. claims 1 and 44),

comprising the steps of: obtaining past data for processing by the computer (see col. 4,

line 60 – col. 5, line 49); generating a predictive model with the processor from the past

data (see col. 6, lines 23-32; col. 9, lines 43-48; see also col. 8, lines 3-15); storing a

representation of the predictive model in the computer storage (see col. 7, lines 44-60);

receiving current data for processing by the processor (see col. 8, lines 16-28); and

generating a computer signal indicative of the creditworthiness of the current credit

applicant, wherein the processor generates the computer signal by applying the current

data to the stored model (see id.).

Shao does not disclose the past and current data comprising psychometric

interviews data.

Saphir teaches a method for evaluating an entity's creditworthiness, wherein the creditworthiness is based on psychometric interviews data, including management savvy, responsiveness, integrity and other character attributes.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the psychometric data taught by Saphir as part of the generation of the predictive models and evaluation of creditworthiness as disclosed by Shao. Motivation for including psychometric data in a creditworthiness evaluation would be that as taught by Saphir—to gain a more accurate understanding of creditworthiness. Saphir recites, "All three ratings agencies seem to understand that subjective factors are as important, if not more important, than past historical financial ratios in trying to understand the future creditworthiness..."

In regard to claim 2, Shao further discloses the steps of: monitoring a performance metric of the model, wherein the processor monitors the performance metric; comparing the performance metric with a predetermined performance level; and generating and storing a new predictive model from past data responsive to the performance metric, wherein the new predictive model is generated by the processor and stored (see col. 8, line 62 - col. 9, line 48).

In regard to claim 3, *insomuch as understood in view of the 35 U.S.C. § 112 Rejections above*, Shao further discloses the metric comprising a measurement of a rate of non-performing loans (see col. 8, lines 29-61).

In regard to claim 4, it would be obvious in view of the combination of Shao and Saphir set forth above to combine past and current credit application-related data of

Shao (i.e. "traditional credit card account information" -- see col. 5, lines 6-12) with the psychometric data disclosed by Saphir, in order to carry out the method set forth above with respect to claim 1.

In regard to claim 5, the psychometric data disclosed by Saphir includes answers to a psychometric interview provided by at least one interviewee associated with the credit applicant. Saphir recites, "More than ever, management savvy, responsiveness and simple integrity can overshadow raw numbers in determining what credit rating a hospital gets, and, ultimately, what premium it pays to borrow money ... In the case of the managers who didn't provide market share numbers, 'It cost them a notch (in their rating). It was a fair question, and they said, 'Nah, we don't track that stuff.' I'm going, 'Not the right answer,' ' recalls Gordon Howie, a managing director at investment bank Paine Webber."

In regard to claim 6, the psychometric interview data disclosed by Saphir comprises answers to a psychometric interview provided by at least one interviewee associated with the credit applicant selected upon a pre-determined association relationship, such as lender and borrower.

In regard to claim 7, the psychometric interview data disclosed by Saphir further comprises the amount of time each interviewee took to answer questions. Saphir recites, " 'When we ask questions, if they can respond to us right away' that's a positive, says Standard & Poor's analyst Susan Hill."

In regard to claim 8, the psychometric interview data disclosed by Saphir further comprises answers provided by a plurality of interviewees ("management") associated with the credit applicant.

In regard to claim 9, the disclosure of Saphir contemplates interviewing both the Chief Executive Officer and the Chief Financial Officer. Saphir recites, "[I]t shouldn't always be the CFO who's responding." "Senior management," "executives" and "controllers" are also interviewed by the method of Saphir.

In regard to claim 10, the interviewees disclosed by Saphir are associated with a loan applicant.

In regard to claim 11, the interview questions asked by the method of Saphir are from a pool of questions.

In regard to claim 12, the applicant disclosed by Saphir is a business.

In regard to claim 13, Shao further discloses the creditworthiness metric including a representation of the likelihood of success of a contemplated business relationship (see col. 3, lines 23-29).

In regard to claim 14, the relationship is a loan (see col. 4, lines 28-38).

In regard to claim 15, the relationship disclosed by Saphir is an equity investment. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the system of Shao to determine a creditworthiness metric that includes a representation of the likelihood of success of a contemplated business relationship, wherein the relationship comprises an equity investment. Loans and equity

investments are known business relationships for which creditworthiness of a borrower or investee is determined prior to a commitment of capital.

In regard to claim 16, Shao further discloses combining current credit score data with creditworthiness indication generated by the disclosed model (see col. 10, lines 14-21).

In regard to claims 17-19, the limitation set forth are deemed unpatentable over the Shao reference in view of the Saphir reference as applied to claims 1-16 above.

In regard to claim 20, it would have been obvious to one of ordinary skill in the art at the time of the invention to conduct the method disclosed by Shao over the internet. It was well-known and common at the time of the invention to automate processes such as creditworthiness evaluations via the internet.


Claims 1-20 are further rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's specification in view of Saphir, *More than numbers*, Modern Health Care. Aug 21, 2000 (hereafter Saphir).

In regard to the claims, Applicant's disclosure sets forth the state of the art of creditworthiness determination at the time of the invention (see [0015]), including the use of statistical modeling (see [0022]-[0025]), including linear regression modeling, logistic regression modeling, neural network modeling (see [0025]), and model training (see [0026]-[0029]).

Applicant's disclosure does not disclose the utilization of psychometric data in the creditworthiness determinations known at the time of the invention.

However, Saphir teaches the method for evaluating an entity's creditworthiness as set forth above.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the psychometric data taught by Saphir as part of the generation of the predictive models and evaluation of creditworthiness as disclosed by Applicant's disclosure. Motivation for including psychometric data in a creditworthiness evaluation would be that as taught by Saphir—to gain a more accurate understanding of creditworthiness. Saphir recites, "All three ratings agencies seem to understand that subjective factors are as important, if not more important, than past historical financial ratios in trying to understand the future creditworthiness..."

With respect to the above rejections, the Examiner has cited particular portions of the reference(s), and although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested that the Applicant consider each cited reference in its entirety as potentially teaching the limitations of the claimed invention.

## Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- US Patent Application Publication No. 2003/0009418 to Green et al.

- US Patent Application Publication No. 2003/0120589 to Williams et al.

- US Patent Application Publication No. 2004/0044615 to Xue et al.

- US Patent Application Publication No. 2004/0107161 to Tanaka et al.

- US Patent Application Publication No. 2005/0278245 to Celati

- US Patent No. 3,316,395 to Lavin

- US Patent No. 6,029,149 to Dykstra et al.

- US Patent No.6,208,979 to Sinclair

- "Oscore Welcomes New Board Members, Holds Inaugural Board Meeting.' Market Wire. Oct 2003.

- Lee and Jung, "FORECASTING CREDITWORTHINESS: LOGISTIC VS. ARTIFICIAL NEURAL NET." The Journal of Business Forecasting Methods & Systems; Winter 1999/2000; pg. 28.

- Karlan, "Social Capital and Microfinance." Massachusetts Institute of Technology, 2002.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JARED W. NEWTON whose telephone number is (571)272-2952. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Kramer can be reached on (571) 272-6783. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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published applications may be obtained from either Private PAIR or Public PAIR.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James A. Kramer/
Supervisory Patent Examiner, Art Unit 3693

JWN
February 1, 2008